

Claim 1-6
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What is claimed is:

1. A method of constructing a probe assembly, comprising the steps of:
 - 1 creating a layout of a flexible circuit and etching said layout on said flexible circuit, wherein said layout results in a pattern of unetched portions;
 - 5 drilling plurality of holes in a pair of rigid PC Boards in a pattern matching the pattern of unetched portions;
 - plating the plurality of holes with annular rings;
 - making a laminate stack by laminating the flexible circuit between the two PC Boards;
 - 10 pressing a plurality of nail pins into the laminate stack, wherein each of said nail pins has a head and each of said pins is pressed until the head is flush with one of said PC Boards and said pins extend through said laminate stack;
 - placing solder preforms over the portion of said pins extending through said stack; and
 - 15 reflowing said solder preforms to mechanically and electrically attach the pins to one of said PC Boards.
2. The method of claim 1, further comprising the step of:
 - attaching a BGA socket to said laminate stack so that the ball grid array of said BGA socket contacts with the heads of the plurality of pins.
- 20 3. The method of claim 1, wherein said flexible circuit contains a plurality of inner signal layers, each of said layers having said pattern of unetched portions.

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4. The method of claim 3, wherein each of said unetched portions is a star pattern.
5. The method of claim 4, wherein each of said unetched portions has a diameter slightly larger than a diameter of a nail head pin.
6. The method of claim 5, wherein the plurality of holes drilled into the pair of rigid PC Boards have diameters equal to the press fit diameter of the nail pins.
7. A probe assembly comprising:
 - a flexible circuit, said flexible circuit having a layout etched thereon with said layout forming a pattern of unetched portions;
 - an upper and a lower rigid PC Board, said upper and lower rigid PC Boards having a plurality of holes drilled therein in a pattern matching said unetched portions pattern; and
 - a plurality of nail pins, each of said plurality having a head and a diameter; wherein, said flexible circuit is laminated between said upper and lower PC Boards, said plurality of nail pins are press fit through said holes in said PC Boards until extending through said bottom PC Board and said heads are flush with said top PC Board and said pins are soldered to said bottom PC Board by a plurality of solder preforms placed over said pins and reflowed.